

CSCE 206: Scientific Applications Programming

Class dates: 18 August - 8 December 2022
Schedule: TTh 1:15-2:30 pm
Location: 300 Main St, Room B213
Instructor: Robert Bailey
Office: INNOVA 2247
Office hours: MW 3:30-4:30 pm (or by appointment)
Email: baileyrt@email.sc.edu
TA/Grader: Iftakhar Ahmad - IAHMAD@email.sc.edu
Final exam: 8 Dec 2022 at 12:30 pm

Academic Bulletin Description

Introduction to computer applications in science and engineering. Programming exercises in a high-level language. Open to all majors

Prerequisites

MATH 122 or MATH 141

Course Objectives

- Program in a high-level language
- Solve numerical problems using a computer
- Read and design numerical algorithms
- Design data structures

Recommended Textbook

Hans Petter Langtangen. 2016. A Primer on Scientific Programming with Python (Texts in Computational Science and Engineering) 5th ed. Springer Publishing Company, Inc. ISBN: 978-3662498866

Textbook is not required (homework will not be assigned from the book), but may be useful.

Required Software

Python 3 (<https://www.python.org/downloads/>)

Visual Studio Code (<https://code.visualstudio.com/Download>)

Note: Windows, Mac, and Linux are compatible with Python and VS Code. If you only have a Chromebook, you may need to use a computer lab machine or find some other solution.

Grading

- Labs: 10 labs, 50%
- Homeworks: 4 assignments, 20%
 - Plus 1 extra credit assignment
- Final: Take home, 30%

Standard grading scale:

[90-100]=A, [87-89]=B+, [80-86]=B, [77-79]=C+, [70-76]=C, [67-69]=D+, [60-66]=D, [0-59]=F
Labs/quizzes will be roughly every Thursday. You'll get 50% credit for submitting a solution, and the other 50% if the solution works correctly.

Homeworks will evaluate understanding of the concepts taught in class.

The final exam will be distributed 3 days before the exam date, to give sufficient time to complete it. It will be project-based (writing code).

Academic Integrity

University policies and procedures regarding academic integrity are defined in policy STAF 6.25, Academic Responsibility - The Honor Code (see <http://www.sc.edu/policies/ppm/staf625.pdf>).

Prohibited behaviors include plagiarism, cheating, falsification, and complicity. All potential Honor Code violations will be reported to the Office of Student Conduct and Academic Integrity, which has the authority to implement non-academic penalties as described in STAF 6.25.

Academic penalties for Honor Code violations in this course range from a zero on the assignment to failure of the course.

Cheating

I have a zero tolerance policy when it comes to posting my assignments online on sites like Chegg and StackOverflow, to name a few. This is cheating. This kind of cheating will result in a report to the Office of Academic Integrity and, if found guilty, a zero on the assignment. Please don't cheat. Come to me first if you have any questions.

Collaboration

Assignments should be done independently. It is permissible to discuss the problems at a high level with your classmates, but you should work out the details and compose the complete answers independently. Submission of identical or substantially identical work will be considered strong evidence that cheating has occurred.

Accommodating Disabilities

The Student Disability Resource Center (SDRC) empowers students to manage challenges and limitations imposed by disabilities. (<http://www.sa.sc.edu/sds/>). Students with disabilities are encouraged to contact me to discuss the logistics of any accommodations needed to fulfill course requirements (within the first week of the semester). In order to receive reasonable accommodations from me, you must be registered with the Student Disability Resource Center (1523 Greene Street, LeConte Room 112A, Columbia, SC 29208, 803-777-6142). Any student with a documented disability should contact the SDRC to make arrangements for appropriate accommodations.

Counseling Services

The University offers counseling and crisis services as well as outreach services, self-help, and frequently asked questions.

https://sc.edu/about/offices_and_divisions/health_services/medical-services/index.php

Tentative Course Schedule

The following is subject to change. Any changes will be announced through email and announcement on Blackboard.

Note: Any date on which class is canceled, the corresponding office hours are also canceled.

Day	Date	Topics	Assignment
1	18 Aug	Syllabus, expectations, intro	Homework 1 assigned
2	23 Aug	Intro to Python, Repl, VS Code	
N/A	24 Aug	DROP DAY	N/A
3	25 Aug	Python on Windows, Linux, Mac	Homework 1 due
4	30 Aug	Data types, variables, operators	
5	1 Sep	Lab 1	
N/A	5 Sep	LABOR DAY HOLIDAY	N/A
6	6 Sep	File IO, standard functions, booleans	
7	8 Sep	Lab 2	
8	13 Sep	Conditionals, if statements	Homework 2 assigned
9	15 Sep	Lab 3	
10	20 Sep	While, for loops	
11	22 Sep	Lab 4	Homework 2 due
12	27 Sep	Lists	Homework 3 assigned
13	29 Sep	Lab 5	
14	4 Oct	List functions	
15	6 Oct	Lab 6	Homework 3 due
16	11 Oct	List functions	
17	13-14 Oct	FALL BREAK (NO CLASS)	NONE
18	18 Oct	Libraries	Homework 4 assigned
19	20 Oct	Lab 7	
20	25 Oct	Writing functions	

21	27 Oct	Lab 8	Homework 4 due
22	1 Nov	Writing functions	
N/A	2 Nov	WF DROP DAY	N/A
23	3 Nov	Lab 9	
24	8 Nov	ELECTION DAY (NO CLASS)	NONE
25	10 Nov	TBD	Homework 5 assigned
26	15 Nov	TBD	
27	17 Nov	Lab 10	Homework 5 due
28	22 Nov	TBD	EC homework assigned
29	23-25 Nov	THANKSGIVING (NO CLASS)	NONE
30	29 Nov	Lab 11	EC homework due
31	1 Dec	Review	Final exam assigned
N/A	2 Dec	LAST DAY OF CLASSES	N/A
N/A	3 Dec	READING DAY	No exam work
N/A	8 Dec	Final Exam	Final exam due